

### **Remarks**

The Office Action of February 8, 2007 has been carefully considered. In that Action, Claims 1-40 were pending, with Claims 8-10, 13-24, 26-29 and 31-40 withdrawn. The Office rejects Claims 1-7, 11, 12, 25 and 30. Applicants respectfully request reconsideration based on the remarks below.

#### **35 U.S.C. §112**

The Office rejects Claim 7 under 35 U.S.C. §112 as being indefinite for failing to clearly point out and distinctly claim the subject matter which applicants regard as the invention. Applicants have amended Claim 7 to recite that the preform is formed from a 3-D woven fabric having at least an x-yarn woven in an x axis, a y-yarn woven in a y axis, and a z-yarn woven in a z axis. Support for this amendment may be found, inter alia, in Figure 1 of the application as filed showing yarn 8, which may be considered an x-yarn woven in an x axis, yarn 6, which may be considered a y-yarn woven in a y axis, and yarn 4, which may be considered a z-yarn woven in a z axis. Applicant believes this amendment addresses the Office's concerns.

#### **35 U.S.C. §102/§103**

The Office maintains the rejection of Claims 1, 7, 11, 12, 25 and 30 under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 6,381,482 ("Jayaraman"). Claims 2-6 are rejected as anticipated/rendered obvious by Jayaraman or United States Patent No. 5,029,977 ("Wheeler"). Applicants respectfully request reconsideration for the reasons set forth below.

The Office states that all fabrics are three-dimensional because they occupy three dimensions in space. The Office also requests that applicants further distinguish the claimed invention from fabrics that occupy three dimensions in space. Applicants believe the Office's concerns are addressed by currently amended Claim 1.

Claim 1 currently recites, inter alia, that the *fiber preform is engineered from a 3-D fabric formed by intersecting components along at least three axes*. Both Jayaraman and Wheeler only disclose fabrics formed by intersecting components along two axes, e.g., an axis in the weft direction and an axis in the warp direction. For at least this

reason, applicants respectfully believe that all of the currently pending claims are patentable over the cited references.

Further, applicants respectfully believe that the Office is aware that these types of process of manufacture limitations are entitled to patentable weight “especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product” MPEP 2113 *citing In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979). Applicants’ specification sets forth the distinctive structural characteristics of the claimed product, for example, applicants’ specification provides (page 3, lines 1-11):

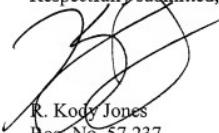
The plurality of controllably isolated or joined fiber or tow layers formed in 3-D fabrics provide particularly valuable opportunities, well beyond that of 2-D fabrics, for the development of elaborate functional systems, circuits, or networks as is so often done with multi-layer integrated circuits or multi-layer hydraulic manifolds. The very regular, inherently periodic nature of 3-D orthogonally woven and other 3-D fabrics, which are mentioned here as examples, allows them to perform functions similar to those of 3-D grids, arrays or networks. Examples of such functions include phased array emission/detection, shielding or refraction or diffraction of a known wavelength, damage and delamination detection, resin flow and cure rate control, acoustic emission signal sensing, active control of shapes, vibration suppression, supply or transmission of fluids to mention a few.

For at least these reasons, applicants believe that Claims depending from Claim 1 are patentable as well. Additional claims, e.g. Claim 7, contain additional limitations which are not met by the references.

### **Conclusion**

For at least the reasons given above, applicants believe that this amendment places the case in condition for allowance. Such action is respectfully requested. If, however, any issue remains unresolved, a telephone call to expedite allowance and issue is requested.

Respectfully submitted,



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